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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,943	11/21/2003	Philip V. Pesavento	260385.20004	3523

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REED SMITH, LLP
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EXAMINER	
ERDEM, FAZLI	
ART UNIT	**PAPER NUMBER**
2826	

DATE MAILED: 08/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/719,943	PESAVENTO, PHILIP V.	
	Examiner	Art Unit	
	Fazli Erdem	2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 May 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) *32* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *11/21/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 5/17/2005 have been fully considered but they are not persuasive. Regarding Claims 1-4, Stengel et al. disclose a structure and method for fabricating semiconductor structures and devices utilizing the formation of a compliant substrate including an isotopically enriched material where in Fig. 9-12 it is disclosed isotopically enriched monocrystalline oxide material. Stengel et al. fail to disclose the oxide material to be piezoelectric type. However, Aoyama discloses multi-component-based ceramic material and perovskite-type PZT crystal where the PZT crystal is piezoelectric material. Regarding Claims 5-8, Stengel et al. disclose a structure and method for fabricating semiconductor structures and devices utilizing the formation of a compliant substrate including an isotopically enriched material where in Fig. 9-12 it is disclosed isotopically enriched monocrystalline oxide material. Stengel et al. fail to disclose the oxide material to be piezoelectric type and the Si28 type silicon isotope. However, Aoyama discloses multi-component-based ceramic material and perovskite-type PZT crystal where the PZT crystal is piezoelectric material. Furthermore, Burden discloses isotopically pure silicon-on-insulator wafer and method of making same where in claims section the required Si28 isotope is disclosed. Regarding Claims 9-18, Stengel et al. disclose a structure and method for fabricating semiconductor structures and devices utilizing the formation of a compliant substrate including an isotopically enriched material where in Fig. 9-12 it is disclosed isotopically enriched monocrystalline oxide material. Stengel et al. fail to disclose the oxide material to be piezoelectric type and the

Si29 and Si30 type silicon isotopes. However, Aoyama discloses multi-component-based ceramic material and perovskite-type PZT crystal where the PZT crystal is piezoelectric material. Furthermore, Kelsey et al. disclose isotopically engineered optical materials where the required Si29 and Si30 isotopes are disclosed. Regarding Claims 19-31, Stengel et al. disclose a structure and method for fabricating semiconductor structures and devices utilizing the formation of a compliant substrate including an isotopically enriched material where in Fig. 9-12 it is disclosed isotopically enriched monocrystalline oxide material. Stengel et al. fail to disclose the oxide material to be piezoelectric type and the required different type of devices. However, Aoyama discloses multi-component-based ceramic material and perovskite-type PZT crystal where the PZT crystal is piezoelectric material. Furthermore, Mulligan et al. disclose multi-functional composite structures where the required different types of devices are disclosed.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-4 rejected under 35 U.S.C. 103(a) as being unpatentable over Stengel et al. (2003/0034505) in view of Aoyama et al. (JP 10218696).

Regarding Claims 1-4, Stengel et al. disclose a structure and method for fabricating semiconductor structures and devices utilizing the formation of a compliant

substrate including an isotopically enriched material where in Fig. 9-12 it is disclosed isotopically enriched monocrystalline oxide material. Stengel et al. fail to disclose the oxide material to be piezoelectric type. However, Aoyama discloses multi-component-based ceramic material and perovskite-type PZT crystal where the PZT crystal is piezoelectric material.

It would have been obvious to one of having ordinary skill in the art at the time the invention was made to include the required piezoelectric material in Stengel at al. as taught by Aoyama et al. in order to have a semiconductor device with increased functionality.

3. Claims 5-8 rejected under 35 U.S.C. 103(a) as being unpatentable over Stengel et al. (2003/0034505) in view of Aoyama et al. (JP 10218696) further in view of Burden (2004/0171226).

Regarding Claims 5-8, Stengel et al. disclose a structure and method for fabricating semiconductor structures and devices utilizing the formation of a compliant substrate including an isotopically enriched material where in Fig. 9-12 it is disclosed isotopically enriched monocrystalline oxide material. Stengel et al. fail to disclose the oxide material to be piezoelectric type and the Si28 type silicon isotope. However, Aoyama discloses multi-component-based ceramic material and perovskite-type PZT crystal where the PZT crystal is piezoelectric material. Furthermore, Burden discloses isotopically pure silicon-on-insulator wafer and method of making same where in claims section the required Si28 isotope is disclosed.

It would have been obvious to one of having ordinary skill in the art at the time the invention was made to include the required piezoelectric material and Si28 isotope in Stengel at al. and as taught by Aoyama et al. and Burden respectively, in order to have a semiconductor device with increased functionality.

4. Claims 9-18 rejected under 35 U.S.C. 103(a) as being unpatentable over Stengel et al. (2003/0034505) in view of Aoyama et al. (JP 10218696) further in view of Kelsey et al. (2003/0039865)

Regarding Claims 9-18, Stengel et al. disclose a structure and method for fabricating semiconductor structures and devices utilizing the formation of a compliant substrate including an isotopically enriched material where in Fig. 9-12 it is disclosed isotopically enriched monocrystalline oxide material. Stengel et al. fail to disclose the oxide material to be piezoelectric type and the Si29 and Si30 type silicon isotopes. However, Aoyama discloses multi-component-based ceramic material and perovskite-type PZT crystal where the PZT crystal is piezoelectric material. Furthermore, Kelsey et al. disclose isotopically engineered optical materials where the required Si29 and Si30 isotopes are disclosed.

It would have been obvious to one of having ordinary skill in the art at the time the invention was made to include the required piezoelectric material and Si29 and Si30 isotopes in Stengel at al. and as taught by Aoyama et al. and Kelsey et al. respectively, in order to have a semiconductor device with increased functionality.

5. Claims 19-31 rejected under 35 U.S.C. 103(a) as being unpatentable over Stengel et al. (2003/0034505) in view of Aoyama et al. (JP 10218696) further in view of Mulligan et al. (6,805,946).

Regarding Claims 19-31, Stengel et al. disclose a structure and method for fabricating semiconductor structures and devices utilizing the formation of a compliant substrate including an isotopically enriched material where in Fig. 9-12 it is disclosed isotopically enriched monocrystalline oxide material. Stengel et al. fail to disclose the oxide material to be piezoelectric type and the required different type of devices. However, Aoyama discloses multi-component-based ceramic material and perovskite-type PZT crystal where the PZT crystal is piezoelectric material. Furthermore, Mulligan et al. disclose multi-functional composite structures where the required different types of devices are disclosed.

It would have been obvious to one of having ordinary skill in the art at the time the invention was made to include the required different types of devices in Stengel at al. and as taught by Aoyama et al. and Mulligan et al. respectively, in order to have a semiconductor device with increased functionality.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fazli Erdem whose telephone number is (571) 272-1914. The examiner can normally be reached on M - F 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (571) 272-1915. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

FE
July 29, 2005

EVAN PERT
PRIMARY EXAMINER